I claim:

1. An electromechanical shifting apparatus for a vehicle having an electrical system and a transmission equipped with a counter shaft utilizing partial rotation to shift gears, the shifting apparatus comprising;

(a) an actuator assembly including a bidirectional, linear actuator member powered by an electrical motor, the actuator assembly secured to a frame of the vehicle;

(b) a shift linkage operatively connecting the bidirectional, linear actuator member to the counter shaft of the vehicle transmission;

(c) a wiring harness assembly connected to the electrical system of the vehicle, the wiring harness assembly powering the electrical motor of the actuation assembly; and

(d) a switch member interconnected with the wiring harness, the switch member including first and second actuation positions and an off position, the first actuation position providing a selected current flow direction to the actuator assembly motor to drive the linear actuator member in a first direction and the second actuation position reversing the current flow direction to the actuator assembly motor relative to the selected current flow direction, thereby driving the linear actuator member in a second direction opposite the first direction.

2. The electromechanical shifting apparatus of claim 1, wherein the actuator assembly is secured to the vehicle frame by a mounting bracket member.

3. The electromechanical shifting apparatus of claim 1, wherein the bidirectional linear actuator member includes a gear drive.

4. The electromechanical shifting apparatus of claim 1, wherein the bidirectional linear actuator member includes a screw drive.

5. The electromechanical shifting apparatus of claim 1, wherein the bidirectional linear actuator member includes a belt drive.

6. The electromechanical shifting apparatus of claim 1, wherein the switch member includes a double pole double throw switch member.

7. The electromechanical shifting apparatus of claim 1, wherein the switch member includes a momentary on/off/on momentary switch member.

8. The electromechanical shifting apparatus of claim 1, further including a switch mounting bracket for mounting the switch member to the vehicle frame.

9. The electromechanical shifting apparatus of claim 1, wherein the switch member is mounted to a steering handle bar of the vehicle.

10. An electromechanical shifting apparatus for a vehicle having an electrical system and a transmission equipped with a counter shaft utilizing partial rotation to shift gears, the shifting apparatus comprising;

(a) an actuator assembly including a gear drive, bidirectional, linear actuator member powered

by an electrical motor, the actuator assembly secured to a frame of the vehicle;

(b) a shift linkage operatively connecting the bidirectional, linear actuator member to the counter shaft of the vehicle transmission;

(c) a wiring harness assembly connected to the electrical system of the vehicle, the wiring harness assembly powering the electrical motor of the actuation assembly; and

(d) a switch member interconnected with the wiring harness, the switch member including first and second actuation positions and an off position, the first actuation position providing a selected current flow direction to the actuator assembly motor to drive the linear actuator member in a first direction and the second actuation position reversing the current flow direction to the actuator assembly motor relative to the selected current flow direction, thereby driving the linear actuator member in a second direction opposite the first direction.

11. The electromechanical shifting apparatus of claim 10, wherein the actuator assembly is secured to the vehicle frame by a mounting bracket member.

12. The electromechanical shifting apparatus of claim 10, wherein the switch member includes a double pole double throw switch member.

13. The electromechanical shifting apparatus of claim 10, wherein the switch member includes a momentary on/off/on momentary switch member.

14. The electromechanical shifting apparatus of claim 10, further including a switch mounting bracket for mounting the switch member to the vehicle frame.

15. The electromechanical shifting apparatus of claim 10, wherein the switch member is mounted to a steering handle bar of the vehicle.

16. An electromechanical shifting apparatus for a vehicle having an electrical system and a transmission equipped with a counter shaft utilizing partial rotation to shift gears, the shifting apparatus comprising;

(a) an actuator assembly including a gear drive, bidirectional, linear actuator member powered by an electrical motor, the actuator assembly mounted to a bracket secured to a frame of the vehicle;

(b) a shift linkage operatively connecting the bidirectional, linear actuator member to the counter shaft of the vehicle transmission;

(c) a wiring harness assembly connected to the electrical system of the vehicle, the wiring harness assembly powering the electrical motor of the actuation assembly; and

(d) a switch member interconnected with the wiring harness, the switch member mounted to a bracket secured to a steering handle bar of the vehicle, the switch member including first and second actuation positions and an off position, the first actuation position providing a selected current flow direction to the actuator assembly motor to drive the linear actuator member in a first direction and the second actuation position reversing the current flow direction to the actuator assembly motor relative to the selected current flow direction, thereby driving the linear actuator member in a second direction opposite the first direction.

17. The electromechanical shifting apparatus of claim 16, wherein the switch member includes a double pole double throw switch member.

18. The electromechanical shifting apparatus of claim 16, wherein the switch member includes a momentary on/off/on momentary switch member.